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Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody

HEF1 Antibody
Catalog # ASR4169

Specification

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Product Information

Host	**Mouse**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Application	**WB, E, IP, I, LCI**
Application Note	**This monoclonal antibody has been tested for use in western blotting, immunoprecipitation and immunofluorescence. Specific conditions for reactivity should be optimized by the end user. Expect bands approximately 115 and 105 in size corresponding to isoforms of HEF1 protein by western blotting in the appropriate cell lysate or extract. This antibody does not recognize p130Cas. Sin1 has not been tested. IF was performed using 4% PFA fixed cells. This monoclonal antibody mostly detects HEF1 localized at the focal adhesion sites.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**Anti-HEF1 monoclonal antibody was produced by repeated immunizations with a synthetic peptide corresponding to amino acid residues 82-398 of human HEF1 protein (hHEF1, 843 aa, predicted MW 92.8 kDa).**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Additional Information

Gene ID 4739

Other Names
4739

Purity
This Protein A purified antibody is directed against human HEF1 protein. The product was purified from tissue culture supernatant by chromatography. Reactivity occurs against human, mouse and rat forms of the protein. Reactivity against multiple isoforms is expected. Reactivity against homologues from other sources is not known. Specificity was determined by partial epitope mapping.

Storage Condition
Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Protein Information

Name NEDD9 (HGNC:7733)

Function
Scaffolding protein which plays a central coordinating role for tyrosine-kinase-based signaling related to cell adhesion (PubMed:24574519). As a focal adhesion protein, plays a role in embryonic fibroblast migration (By similarity). May play an important role in integrin beta-1 or B cell antigen receptor (BCR) mediated signaling in B- and T-cells. Integrin beta-1 stimulation leads to recruitment of various proteins including CRKL and SHPTP2 to the tyrosine phosphorylated form (PubMed:9020138). Promotes adhesion and migration of lymphocytes; as a result required for the correct migration of lymphocytes to the spleen and other secondary lymphoid organs (PubMed:17174122). Plays a role in the organization of T-cell F- actin cortical cytoskeleton and the centralization of T-cell receptor microclusters at the immunological synapse (By similarity). Negatively regulates cilia outgrowth in polarized cysts (By similarity). Modulates cilia disassembly via activation of AURKA-mediated phosphorylation of HDAC6 and subsequent deacetylation of alpha-tubulin (PubMed:17604723). Positively regulates RANKL-induced osteoclastogenesis (By similarity). Required for the maintenance of hippocampal dendritic spines in the dentate gyrus and CA1 regions, thereby involved in spatial learning and memory (By similarity).

Cellular Location
Cytoplasm, cell cortex. Nucleus. Golgi apparatus. Cell projection, lamellipodium. Cytoplasm. Cell junction, focal adhesion. Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, spindle pole. Cell projection, cilium. Cytoplasm, cytoskeleton, cilium basal body Basolateral cell membrane {ECO:0000250|UniProtKB:A0A8I3PDQ1}

Tissue Location
Expressed in B-cells (at protein level) (PubMed:9020138). Expressed in the respiratory epithelium of the main bronchi to the bronchioles in the lungs (at protein level) (PubMed:9584194). High levels detected in kidney, lung, and placenta (PubMed:9584194). Expressed in lymphocytes (PubMed:9497377)

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

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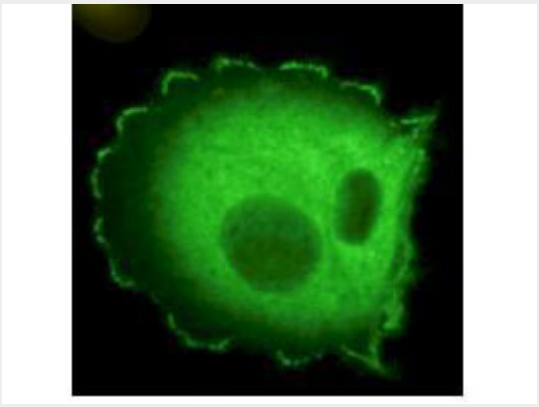
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Images



Immunofluorescence microscopy using Rockland's Monoclonal anti-HEF1 antibody (clone 2G9) shows detection of HEF1 localized at focal adhesion sites. The antibody was used at a 1:500 dilution with a 3-sec exposure time. Personal Communication. Elena Pugacheva, Fox Chase Cancer Center, Philadelphia, PA.

Anti-HEF1 (aa 82-398) (MOUSE) Monoclonal Antibody - Background

HEF1, also known as Enhancer of filamentation 1, CRK-associated substrate-related protein, CAS-L, CasL, p105 and Neural precursor cell expressed developmentally down-regulated 9 is the product of the NEDD9 (CASGL) gene. HEF1 functions as a docking protein that plays a central coordinating role for tyrosine-kinase-based signaling related to cell adhesion. HEF1 may also function in transmitting growth control signals between focal adhesions at the cell periphery and the mitotic spindle in response to adhesion or growth factor signals initiating cell proliferation. HEF1 may also play an important role in integrin beta-1 or B cell antigen receptor (BCR) mediated signaling in B- and T-cells. Integrin beta-1 stimulation leads to recruitment of various proteins including CRK, NCK and SHPTP2 to the tyrosine phosphorylated form. HEF1 forms a homodimer and can heterodimerize with HLH proteins ID2, E12, E47 and also with p130cas. HEF1 also forms complexes in vivo with related adhesion focal tyrosine kinase (RAFTK), adapter protein CRKL and LYN kinase and also interacts with MICAL and TXNL4/DIM1. This protein localizes to both the cell nucleus and the cell periphery and is differently localized in fibroblasts and epithelial cells. In fibroblasts, it is predominantly nuclear and in some cells is present in the Golgi apparatus. In epithelial cells, it is localized predominantly in the cell periphery with particular concentration in lamellipodia, but it is also found in the nucleus. HEF1 is widely expressed although higher levels are detected in kidney, lung, and placental tissue. HEF1 is also detected in T-cells, B-cells and diverse cell lines. HEF1 is activated upon induction of cell growth. Cell cycle-regulated processing produces four isoforms: p115, p105, p65, and p55. Isoform p115 arises from p105 phosphorylation and appears later in the cell cycle. Isoform p55 arises from p105 as a result of cleavage at a caspase cleavage-related site and it appears specifically at mitosis. The p65 isoform is poorly detected. Isoforms p105 and p115 are predominantly cytoplasmic and associate with focal adhesions while p55 associates with the mitotic spindle.